

## DETAILED ACTION

### *Status of the application*

1. Receipt of Applicant's remarks and arguments filed on 25 June 2009 is acknowledged.
2. With regard to the 103(a) rejection, the applicants' arguments are not found persuasive and as such the previous rejection made on 25 March 2009 has been maintained.

### *Response to Arguments*

3. Applicant's arguments filed on 25 June 2009 have been considered but they are not persuasive.

The examiner acknowledges applicants arguments that the **Hara et al** do not disclose using dividing wall columns for the distillation to separate the ethylenamines, and **Kaibel** does not disclose the utilization of DWCs for separating ethylenamines mixtures particularly where there is a simultaneous separation of the components EDA and PIP from the same DWC.

The examiner contends, however, that **Hara et al** teach the use of distillation as a tool to separate the components in the ethylenamines mixture. However, **Kaibel** teaches the advantages of one or more dividing wall columns for the distillative separation of mixtures which contain three or more components [see Figure 5], and also suggested that dividing wall columns make it possible to obtain pure products by a simple, economical and efficient method. High quality products with regard to color, color stability, odor and purity are thus produced. Figures 5 and 11 of **Hara et al** also

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disclose separation of more than one component from a single column, which can be interpreted as simultaneous separation of more than one component from the mixture. Therefore, a skilled person would be motivated to apply **Kaibel's** teachings, such as dividing wall columns, for the separation of the ethylenamines mixture, and to obtain high purity and color stable compounds with a reasonable expectation of success.

Applicants show how the cited references differ from the instant invention, but the obviousness test under 35 U.S.C. 103 is whether the invention would have been obvious in view of the prior art taken as a whole. In re Metcalf et al. 157 U.S.P.Q. 423.

Applicants allege that they obtained the high purity and high quality of the products from their process . However, applicants are not shown beneficial side by side comparison with the closest prior art.

So, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the teachings of **Hara et al** and **Kaibel**, and to arrive at instant claims with a reasonable expectation of success. One would be motivated to combine the teachings to get a better yield of the compounds, since it is within the scope to optimize the conditions through a routine experimentation.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-3, 5-8, 10-17, 19-39 and 41-44 are again rejected under 35 U.S.C. 103(a) as being unpatentable over **Hara et al** (US 5,248,827) in view of **Kaibel** (Chem.Eng.Technol. 10, 1987, 92-98) for the reasons of record as set forth in the office action on 25 March 2009.

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136 (a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no even, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### **Conclusion**

8. No Claim is allowed.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhakar Katakam whose telephone number is 571-272-9929. The examiner can normally be reached on M-F 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sudhakar Katakam/

Examiner, Art Unit 1621

/Peter G O'Sullivan/

Primary Examiner, Art Unit 1621